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Information Systems and Qualitative Research

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Most mature social studies include both qualitative and quantitative methods in the normal course of research activities. Scholars may gain reputations based on one or the other, or in some cases on the combination of both. In fields such as sociology, psychology, history, political science, and even anthropology the balance has been struck; the rules are accepted. Business studies in general, and information systems in particular, have had a much harder time coming to terms with the balance. With so many colleagues using exclusively quantitative methods in business economics, in marketing, in accounting and even in organizational behavior, and other colleagues sticking strictly to formal methods in computer science and software engineering, we have had to fight an uphill battle at times. This volume is evidence of the maturing of information systems as a discipline which can recognize the place of qualitative along with quantitative research methods.

Qualitative research in information systems has been manifested in a wide variety of ways, as is exemplified in this volume. Since the 1970s, and arguably even before, systems researchers have looked to other disciplines to apply qualitative

methods to problems such as decision making, users' responses to computing, and man-machine interfaces. Only recently, however, has it seemed necessary to try to define what qualitative research essentially is and even more urgently, to defend it against those who ignore or denigrate it. Qualitative research in information systems must in each instance reconcile two forces. The first is the technique and standard that is expected in the discipline from which the method is taken. The second is to ensure that the technique, or the associated theoretical baggage from that other discipline, does not diminish the information systems purpose and importance. This is not an easy task. Sometimes we feel that the issue at stake is so pertinent to information systems as a discipline that we can or should overlook or circumvent the standards that the contributing discipline applies. At other times we are so taken up by the techniques that have proven so effective in sociology, for example, that we lose sight of the information systems issues we started with. The papers in this volume, we believe, do not suffer from either of these shortcomings.

What links these papers is first and foremost a community of information systems researchers who have a set of shared interests. It is not so easy to characterize that common interest, especially since most authors personally know only a few of the other authors. One commonality is a commitment to information systems research of high quality. This distinguishes them from those who regard research to be an activity peripherial to teaching and consulting. Another feature is their willingness to attempt qualitative methods. Most of our authors have been engaged in other forms of research, and it would not be right to assume that all of them are devoted to qualitative methods alone. We see this as a strength, and further evidence of the new maturity which we are coming to accept.

The topic of information systems and qualitative research is problemmatic now in at least three ways: in the challenge which information systems poses to traditional research approaches; in the new diversity which is emerging; and in the way in which it calls into question the impact of previous qualitative work.

First, information systems [IS] phenomena have posed serious problems to traditional research approaches in the development of scholarly knowledge about IS. These phenomena have defied the power of traditional research approaches to explain how individuals, groups, organizations, nations and society as a whole can harness computer technology to serve humanity. In *Sciences of the Artificial*, Herbert Simon points out that once a bridge begins to strain under a load greater than it was designed to bear, observers can take advantage of the situation to learn about the materials with which the bridge was constructed and the manner in which it was built. A bridge functioning normally, however, would present no similar opportunity for observation and insight. In much the same way, IS phenomena have come to constitute a load greater than traditional research approaches, alone, were ever intended to bear. IS researchers employing these approaches have fallen short of being able to provide full and satisfactory accounts of the success, failure, effectiveness, efficiency, freedom, and subjugation that occur in instantiations of computer technology in everyday life. In this situation, it is not surprising that the focus of attention should shift, at least temporarily, from IS phenomena to the research approaches by which researchers come to try to understand these phenomena.

Two earlier meetings of Working Group 8.2 of the International Federation for Information Processing (in Manchester in 1984 and in Copenhagen in 1990) convincingly established that IS phenomena have stretched traditional research approaches to, and even beyond, their limits. These two meetings took advantage of the situation to throw open to question, and no longer assume or take for granted, what constituted the traditional research approaches. These approaches were typically those associated with the supposed natural science model of social science research and were labeled (often inaccurately) "positivist," "quantitative," "experimental," and "hypothetico-deductive." While there has been great success in applying natural science and engineering models to research into computer technology, they have been inadequate and inappropriate in explaining the human, group, organizational and societal matters which surround the use of information systems. These matters have come to constitute a load that natural scientists and engineers themselves never intended their research methods to bear.

The Manchester and Copenhagen meetings were milestones in the effort to inaugurate additional research approaches needed to explain and understand information systems. These meetings have lifted some of the burden for qualitative researchers to justify the need for or the legitimacy of their approaches. In the current volume, the authors proceed quickly, assertively and unapologetically to the next steps of applying and refining qualitative research approaches.

Second, as is reflected in these papers, there is an emerging acceptance of diversity in research approaches. Whereas the term "qualitative" once carried the connotation of "anti-positivist," there is qualitative research in this volume that draws confidently upon positivism or other forms of deductivist approaches. For some this is problemmatic, but for others it is expedient, or merely the approach which best seems to solve the problems of evidence gathering in their research domain. Paré and Elam conduct a case study which they say "adopts a positivist view of research in that it is based on predefined research questions, a consideration of *a priori* constructs, and . . . [develops] testable hypotheses." Process models and variance models, which are the subject of the paper by Shaw and Jarvenpaa, are used in a distinctly hypothetico-deductive manner. The supposed distinction between positivism and interpretivism is blurred by research such as that of Romm and Pliskin who demonstrate that the combination of data analysis techniques and situational interpretation are appropriate when trying to gain an understanding of "playing politics with e-mail." In personal correspondence with us concerning a reviewer's comment on her paper, Trauth responded, "I am more on the positivist side of the positivist-relativist continuum than Referee 10 . . . [and] for that I do not think I need to defend myself." In other words, qualitative IS researchers are proceeding with maturity and open minds, willing to adopt and adapt forms of positivism for qualitative research even though, at one time, self-styled positivist IS researchers had perjoratively and imperialistically dismissed all qualitative research as "unscientific." We read this acceptance of what was once seen as the archenemy of qualitative research as a sign that the domain of qualitative IS research has cast off its defensiveness, is secure in its development, and has already commenced a process of maturation. Similarly, the "hybrid models" of Shaw and Jarvenpaa, which

constitute a refutation to and transgression of the previously rigid and non-overlapping categories of process and variance models, is a manifestation of an emerging acceptance of diversity. Gallivan explicates different approaches to triangulation using quantitative and qualitative methods that reveals diversity even within triangulation.

Third, there is the significance of the theme of evaluating qualitative research which underlies this volume. A distinguishing feature here is that we are deliberately reflecting on the accomplishments of qualitative IS research since the times of the Manchester and Copenhagen meetings. With this in mind, we invited M. Lynne Markus to give the keynote address at the Philadelphia meeting of IFIP 8.2, and we commissioned papers specifically to assess what various qualitative approaches have achieved since the mid-1980s. Markus's paper provides a grand tour of how well qualitative IS research has fared, and also how much more remains to be done.

The papers prepared for the Philadelphia meeting of IFIP 8.2 are both retrospective and contemporary.[1] The retrospective elements were to a large extent contrived. We indirectly commissioned four assessment pieces, one of which, the paper on ethnography by Prasad, appears here. This was arranged and edited by Wanda Orlikowski. Another commissioned work, arranged by Boon Siong Neo, is on case research and authored by John King and Lynda Applegate. As it is written in the form of hypertext, it does not appear in this volume, but is available on the world wide web via the home page of IFIP Working Group 8.2. The two remaining commissioned assessment papers on critical social theory and action research did not survive the rigors of the review process, but highlights of a special panel in the program on critical social theory will be made available on the world wide web. Fortunately, an excellent paper on action research came to our attention. Its author, Francis Lau, accepted our invitation to present it as one of the assessment papers at the Philadelphia meeting. In addition to the commissioned works, the paper by Shaw and Jarvenpaa includes a reflective assessment of twenty-eight IS studies that make use of process models, in addition to their own contribution to the process theory approach itself. Because of the quality and theme of that work, it too is being presented as one of the assessment papers.

A collection of papers of this sort could have been organized in a number of ways, and the current structure is by no means the only appropriate one. Two good alternatives to the one used in this book were suggested at a brainstorming session at the December, 1996, meeting of IFIP Working Group 8.2 just prior to the annual International Conference on Information Systems in Cleveland. For each of the three proposed ways of organizing the papers, the astute participants pointed out where the proposed categories were imperfect, suggested different categories under

[1]Sixty papers and panel proposals were submitted to this conference. Along with the program committee members and a few additional experts who served as the referees, we applied the same reviewing practices and standards as for journal submissions. Of the sixty submissions, we conditionally accepted twenty papers and one panel (by Kaplan, Lau, Aarts, and Forsythe). After revisions, we accepted them for publication in this volume.

which certain papers could be classified, noted the overlap of some categories, and revealed where the given categories did not satisfactorily classify one or another paper. In one alternative, there were just three categories: methodological criticism, methods, and practice. Another organizing framework consisted of five categories, the first three corresponding to stages in the research process: theorizing, collecting, and analyzing. The other two stages would cut across these to gather papers which provide frames and those which express arenas. All such categorizations, including the one we are using, suffer from some unevenness and a lack of fit. Furthermore, scholars who submitted papers for publication in this volume did not have any of these categories in mind when they wrote their pieces.

The structure which you have before you does require some explanation. First, it is grounded on the presentational categories which the authors themselves imply through the content of their work. The result is a long list of headings, but it is comprehensibly ordered. The first, *Overviewing and Assessing Qualitative IS Research*, includes the specifically assessment papers, those by Prasad, by King and Applegate, by Shaw and Jarvenpaa, and by Lau, and also the grand-tour assessment paper by Markus. The next heading, *Interpretation and IS Requirements Definition* contains the papers by Davidson, by Urquhart, and by Westrup. *Illustrating, Experiencing, and Being Critical in Ethnography* gathers together papers by Harvey, by Myer, by Ruhleder, and by Trauth. *Interviewing and the Interviewer* brings the paper by Janson, Guimaraes, Brown and Taillieu next to the one by Mantelaers. Three papers addressing *The Social and Political Context of IS* are those by Sawyer, by Silva and Backhouse, and by Romm and Pliskin. *Developments in Qualitative Methods* is a grouping of specifically methodological papers by Ang and Endeshaw, by Garcia and Quek, by Introna and Whitley, by Vidgen and Braa, by Walsham, by Gallivan, and by Paré and Elam.

1 OVERVIEWING AND ASSESSING QUALITATIVE IS RESEARCH

In a sense, all Working Conferences of 8.2 are about qualitative research. The Philadelphia meeting is distinct, however, because of the purposely self-reflective and evaluative stance it takes on qualitative approaches and their history in the information systems field. Markus, in the text of her keynote address, celebrates the status of widespread acceptance of qualitative research in the world of information systems
researchers and calls for qualitative researchers to accept diversity in research approaches amongst ourselves; however, unlike other calls to (or criticisms of) diversity in information systems research, Markus additionally identifies the need for a "convergence on content," where attention to technological details is needed not only to develop good understandings of information systems, but also to differentiate ourselves from other fields that are becoming increasingly interested in the study of information technology. King and Applegate, whose overview and assessment paper about case research is written in hypertext and is available through a pointer on a World Wide Web page at www.isr.uci.edu, also acknowledges the

acceptance of qualitative approaches, but that "qualitative research is viewed as a privilege reserved for those with tenure"; presented in the form of a case itself, their paper allows the reader to examine not only the epistemological and methodological debates, but also the politics of research, with which an untenured Assistant Professor must struggle when pursuing qualitative research in information systems. Looking less at the political context of doing research and more at its content, Lau's paper provides a somewhat dazzling overview and assessment of action research in information systems studies reported in literature over the last 25 years; he concludes by proposing a contemporary information-systems action research framework as a conceptual foundation and practical guide for researchers and practitioners interested in action research for information-systems studies. Shaw and Jarvenpaa, in their overview and assessment of information systems studies, describe and categorize over a score of such studies; whereas the annotation of the studies is useful in itself as a guide to the literature, the paper by Shaw and Jarvenpaa is no less useful citing instances of studies that combine elements of both process-theory research and variance-theory
research, where these instances refuting any claims that hybrid research (combining elements of both process and variance research) is undesirable or inferior. In the final paper in this section, Prasad provides an overview of ethnography as a methodology to study information technologies and contrasts ethnography with other commonly used qualitative field research methods; her paper delves into features of qualitative research that lead some to call it intensive: the concern for "thick description," the
plausibility of accounts, and the cultural context and the immersion of the researcher.

2 INTERPRETATION AND IS REQUIREMENTS DEFINITION

The three strong papers on requirements definition provide an excellent model for how to apply qualitative methods to a mainstream systems development problem. Through longitudinal, in-depth, qualitative field studies of information systems delivery processes, Davidson shows not only how appropriate data are collected, she also explains how it can be analyzed, using techniques honed in the analysis of narrative. A different narrative approach is taken by Urquhart, who uses a form of grounded theory to structure the interpretation of a set of dialogues. These interactions between analyst and client are presented in the form of an unfolding plot where features of the encounter are redefined and presented to check with participants that their intent had been properly represented. Another view of users is presented by Westrup, whose concern is to develop the methods devised by Enid Mumford and those which have come to be known as the Scandinavian cooperative approach for capturing the underlying goals of participants in the process of systems development. Here the capturing process involves a reinterpretation of the expressions of differing participants in the systems development process.

3 ILLUSTRATING, EXPERIENCING, AND BEING CRITICAL IN ETHNOGRAPHY

Myers encourages us to see the advantages of ethnographic methods. They get behind the reasoning of the participants, they have the advantages of structuralist techniques, and they are nonjudgmental. Walsham, judging by his contribution to this volume, would claim that it is not quite so easy, but at least we can see from Myers how immersion techniques work from his brief description of one case. Harvey manages, without being unduely self referential, to reflect ethnographically upon ethnography and does so by the use of Orlikowski's early work in the field. Although there is a potential for loops within loops of self consideration, Harvey avoids this by linking her interpretation of the process of ethnography to both pedagogical and methodological reasoning. Again, it shows that there are no shortcuts to the process of "getting inside." Another approach to explaining the problem of getting inside is that of Trauth, who reflects upon her own heartfelt experiences and provides many useful methodological pointers to prospective newcomers to ethnography. Those pointers have to some extent been anticipated by Ruhleder and Jordan, who demonstrate excellent research methods in their application of video-based interaction analysis to ethnography.

4 INTERVIEWING AND THE INTERVIEWER

Good interviewing techniques have stood at the base of much successful qualitative research in many social studies disciplines. The papers by Mantelaers and by Janson, Guimaraes, Brown and Taillieu demonstrate how such best practices can be used within information systems research. Mantelaers takes us through the steps in part of the design of an interview-based system design procedure. Here the pitfalls of various approaches are described and the specific advantages of proper elicitation techniques are demonstrated. Good elicitation was necessary for the Colruyt case presented by Janson et al. By quoting at length from the interviews themselves, we can see clearly how far in-depth they were able to go. Readers of this volume will have the opportunity to assess the relationship between the explicitly ethnographical approaches covered in the preceding section with the technique based approach of these studies of interviewing.

5 THE SOCIAL AND POLITICAL CONTEXT OF IS

Silva and Backhouse believe that "qualitative research in information systems should be led by theories grounded in interpretive and phenomonelogical premises to make sense and to be consistent." Theirs is an application of actor-network theory which, with three appearances in this volume (see also the papers by Walsham and by Introna and Whitley), might be regarded as a trend, at least among qualitative researchers in Britain. Appropriately, longitudinal analyses have been

adopted by Romm and Pliskin as well as Sawyer and Southwick as the means of charting changing political pressures in organizations.

6 DEVELOPMENTS IN QUALITATIVE METHODS

Actor-network theory reappears in Walsham's paper, which draws together its features to help us make sense of its increasingly awkward and inconclusive application to IS research. His proposals are explicit and would affect many procedural matters if they were to take hold, such as the encouragement of longer texts and more detailed case studies. He also stresses the real distinction between morally judgmental analyses and other forms of research. It is not all that easy to have it both ways. Vigden and Braa advocate a means of adapting action research so that it can become useful as a realistic research strategy through the "action case." This is an advantage to doctoral students and, through their clear guidelines, to those who would need well delineated research practices.

There are many surprising results scattered throughout the papers in this volume. However, perhaps the most surprising result can be seen in the aggregate of qualitative research in the 1990s. Here, finally, we see the end of meek and tentative forays into qualitative methods as applied to information systems. No longer do we have to look to a very small group of pioneers who import methods from elsewhere. Now we can claim that there is a healthy and highly productive element of the study of information systems which draws maturely upon the best of a wide range of social investigative techniques.

7 BIOGRAPHY

Allen S. Lee is the Paul Paré Professor of MIS at McGill University and a senior editor at *MIS Quarterly*. A theme throughout his research has been the advancement of qualitative, interpretive, and case approaches in information systems research and their constructive relationship to quantitative, positivist, and large-sample approaches. He has published in *MIS Quarterly*, *Organization Science*, *Human Relations*, *Information & Management*, and *The Computer Journal*. He earned his doctorate at the Massachusetts Institute of Technology, his master's degree at the University of California at Berkeley, and his bachelor's degree at Cornell University.

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2

The Qualitative Difference in Information Systems Research and Practice

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Abstract

Since the Manchester conference on research methods in Information Systems (IS) more than ten years ago, qualitative IS researchers have made great strides toward acceptance both within the IS field and in broader academic communities. This is a major collective achievement of which we all should be proud. Yet, we may well have reached the point of diminishing returns in this direction. While incremental improvement is possible and desirable, many of us are motivated by more ambitious goals. Therefore, I invite you to join me in undertaking three ambitious ventures: celebrating diversity in qualitative methods, converging on content in our field, and pursuing practicality in IS research. These complementary activities are worthy in their own right and promise important instrumental benefits to our community of research practice.

3

Crisis in the Case Study Crisis: Marginal Diminishing Returns to Scale in the Quantitative-Qualitative Research Debate

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Abstract

The quest for legitimation of research approaches preoccupies many information systems researchers. Researchers who have adopted various forms of "qualitative" research seem particularly concerned about legitimating their work. This desire for legitimation is stimulated in part by ongoing debates about the nature of human

understanding and the way we come to know about the world. In healthy circumstances this produces a useful, self-critical discussion that heads to improvements in the development and execution of research projects. Often, however, these debates are facades. They cover an underlying political struggle for position within the broad patronage structure of the academic world. Certain approaches are seen as "better" – more scientific, more rigorous, more formal, more pure – while others are marginalized as weak, journalistic, and even "atheoretical." These political dynamics are compounded by practical considerations (e.g., the length of time and cost required to conduct rigorous case research and the need for access to managers within companies) and the requirement for a researcher to have achieved a certain level of management and business sophistication to effectively collect and analyze qualitative data.

These realities serve as powerful barriers to case research for all academics. For doctoral students and nontenured faculty, these obstacles are often insurmountable. As a result, few doctoral programs teach students to conduct rigorous qualitative research and the body of knowledge on how to conduct and evaluate such research is not well developed. It is no surprise that qualitative research is viewed as a privilege reserved for those with tenure.

All of this comes at a time when the need for qualitative research is reaching crisis proportions. Faced with a fast-paced, rapidly-changing and complex environment, managers are placing increasing pressure on educational institutions to prepare students to deal with current business realities. Faculty are expected to be knowledgeable of the issues facing managers in the 1990s and to be able to offer solutions to these problems. They are expected to deal with these issues in a holistic manner, rather than segmenting knowledge along narrow functional and discipline-based lines. This type of knowledge is best developed through qualitative, field research that enables deep understanding of a complex phenomena. But, with the tenure clock ticking and a fundamental lack of the skills and understanding required to conduct this type of research, most untenured faculty are forced to fall back on traditional, quantitative research methods.

This paper presents the dilemma faced by an untenured faculty member who is deeply interested in a research problem that is best explored through case research. Through the struggles of the new Assistant Professor, the paper explores the epistemological, political and methodological debates that surround qualitative, case research. The paper is constructed for academic legitimacy in the information systems field. The paper is constructed as a hypertext document and is available in full on the World Wide Web. Access pointers can be obtained from the web site www.isr.uci.edu and can be searched for by the word "ducktest" in any of the commonly used search engines.

4

A Review on the Use of Action Research in Information Systems Studies

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Abstract

This paper examines the use of action research in information systems (IS) studies reported in literature over the last twenty-five years. Thirty such field studies and discussion papers on information technology, system design/use or socio-technical systems were reviewed and compared with those from social science. Evolving patterns are noted among these IS studies in terms of their underlying assumptions, study designs and presentation styles. A contemporary IS action research framework is proposed as a conceptual foundation and practical guide for researchers and practitioners interested in action research for IS studies. Its implications in IS research and practice are discussed.

5

Panel – The Impact of Action Research on Information Systems

R. Baskerville
Binghamton University, USA

M. Myers
University of Auckland, New Zealand

P. A. Nielsen
Aalborg University, Denmark

T. Wood-Harper
Salford University, UK

This panel will discuss the impact of action research methodology on the field of information systems (IS). Action research is often discussed as a paragon of qualitative methods, but how has this method made a significant difference in our understanding of the interaction between information systems and the organization?

The panel will take as a point of departure Francis Lau's paper, "A Review on the Use of Action Research in Information Systems Studies." This paper analyzes a broad spectrum of published IS action research. The panel will consider the impact of this body of research along three dimensions: the impact on IS development (ISD) methods, the impact of IS research methods, and the impact on the goals and objectives of information technology practice. Richard Baskerville will open the panel with a quick overview of the history of action research. This will be followed by three brief presentations. Trevor Wood-Harper will describe the impact of action research on ISD methods. Michael Myers will focus on the impact of action research on IS research methods. Peter Axel Nielsen will describe the effects of action research on IS practice, especially focusing on the changes in Scandinavia.

Following these presentations, the audience will participate in an open discussion of the paper and the impact of this research on the field of IS.

6

Process Models in Information Systems

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Abstract

The classic story of the blind men and the elephant teaches us that in order to fully understand something, we need to observe it from more than one perspective. In this paper, we extend the range of perspectives available for researchers by developing a typology of models. The typology is based on the process-variance dichotomy suggested by Mohr (1982). A selection of empirical IS research is classified with the typology, resulting in the identification of four distinct hybrid models. The research using these four forms is able to make valuable contributions to our knowledge of IS, refuting Mohr's claim that hybrid models are inferior to pure process and variance models. The analysis of the IS research using the typology is combined with a series of interviews with process researchers to yield a collection of implications for researchers interested in studying process or hybrid models.

7

Systems of Meaning: Ethnography as a Methodology for the Study of Information Technologies

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Abstract

This paper explores the implications of using ethnography as a methodology to study information technologies. It outlines the principal distinguishing characteristics of ethnographies by contrasting this methodology with other commonly used qualitative field research. It traces the philosophic roots of ethnography in symbolic anthropology and stresses the methodology's concern for thick description, plausibility of accounts, the cultural context and the immersion of the researcher. The paper also illustrates how the methodology can contribute to our understanding of Information Systems by discussing a few studies in this genre. It concludes by highlighting some recent dilemmas facing researchers in the ethnographic tradition.

8

Panel – Assessing Critical Social Theory Research in Information Systems

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G. Davis
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University of Jyväskylä, Finland

D. Truex
Georgia State University, USA

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The Critical Social Theory (CST) program of information systems research is now just over a decade old. Although the number of researchers associated with the CST program are few, they have had a disproportionately larger impact on the field than other research communities. The main reason for this disproportionate impact can be found in the intense and incisive radical critiques of the foundational assumptions of our field that CST researchers have conducted. These radical critiques have helped to open up the theoretical debate on IS research and point out new directions for future inquiry. But as we turn the century, new challenges are emerging. New information technologies (IT) are rapidly invading all social forms of life, impinging upon the daily experiences of individuals and radically changing the relationship between people and IT. Like no other research program, the CST approach is based on the ideals of emancipation from blind technological rationality and uses of IT that enhances freedom and justice. How then will the CST research program respond to

developments in new information technologies which have the potential to be intensively oppressive?

This panel brings together leading CST-IS researchers and, in keeping with CST tradition, opposing voices to ensure critical self-reflection and debate. The debate and discussion will examine the emergence of new socially transformative information technologies and the role of CST research in helping to shape the future.

Ojelanki Ngwenyama will chair and moderate the panel. He will make introductory remarks that set the panel agenda and closing remarks that tie together the panelists' comments. Kalle Lyytinen will outline the basic tenets of critical social theory and its short history and impact on the theoretical foundations of IS research. Gordon Davis will provide a critique of the critical social theory approach and provide a more general perspective on how CST fits in the mosaic of IS research. Duane Truex will outline some of the important social issues that are emerging around new information technologies and suggest how some of these can be carefully examined and understood from a CST perspective. Finally, Paul Cule will open the debate on the future of CST research in the context of new emerging information technologies.

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Examining Project History Narratives: An Analytic Approach

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Abstract

Scientific interest in human beings' ability and propensity to construe reality through narrative constructions has increased since the 1970s. Although narrative processes have been addressed in the organizational literature, little research attention has yet been given to the role and function of narratives in organizational efforts to develop, implement, and apply information technology. An analytic approach drawn from Mishler (1986b) for the analysis of project history narratives found in research interviews is described. Three project history narratives collected during a field study of systems development are analyzed using this approach. Differences in sensemaking and interpretation revealed in the analysis of each informant's story and comparison of the analysis of multiple stories are discussed. Insights that narrative analysis may provide into the social cognitive worlds of participants in IS development and its applications in IS research are then considered.

10

Exploring Analyst-Client Communication: Using Grounded Theory Techniques to Investigate Interaction in Informal Requirements Gathering

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Abstract

This paper describes a case study in client-analyst interaction during the requirements gathering phase. The focus of this work is a discussion of interactional tactics used by analysts and clients to facilitate shared understanding and agreement and how this may impact on conceptualization of information systems. The paper also describes in detail methodological issues encountered when analysing conversational data and how these issues were resolved by application of grounded theory techniques allied with other qualitative techniques. Finally, the paper gives some suggestions as to how the findings could assist current practice in systems analysis, particularly with regard to how systems analysts might better structure their interactions.

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Constituting Users in Requirements Techniques

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Abstract

This paper explores the concepts of the "user" and "user participation" in the information systems (IS) literatures. It argues that categories such as future IS users are constituted by the processes of systems development such as requirements analysis techniques. The upshot of this argument is straightforward: qualitative research should not naively deploy categories such as users without acknowledging the considerable work that has gone into their constitution. This is not just an important academic nicety: constituting categories such as users and developers is shown to be a major concern of those engaged in systems development because it facilitates control of this process. The paper examines two well known approaches to systems development that involve users: ETHICS/QUICKethics and the Scandinavian cooperative approach, to show their constitutive effects. While agreeing that user participation is desirable, this paper makes four points that compromise many of the ambitions of user participation in systems development. First, that user participation is engaging in a political process in which issues of representation are central; second, that users (and systems developers) are categories constituted by these processes of systems development; third, that the users' ability to speak for the organization is usually limited; and finally, that users need to be wary of how information technology is represented to them by developers. Through these arguments, this paper seeks to contribute to the issue of researching IS by showing difficulties in the very *vocabularies* of systems development.

12

A Discourse on Ethnography

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Abstract

Ethnography is an approach to social inquiry developed by anthropologists and recently adopted by interpretive information systems researchers. In recent debates in anthropology, radical changes regarding appropriate approaches to ethnography have been presented. This paper looks at those changes and applies the debate to interpretive information systems research. The key assumption in this paper is that information systems is a discipline that is changing within a socio-historical context. Looking at interpretive information systems research as an emergent area in the discipline of information systems, an analysis is conducted of a product of the socio-historical context in order to illustrate the flux of changes which appear to be happening. These changes are related to the debates on ethnography in anthropology. The product of socio-historical disciplinary change which is analyzed is an unpublished Ph.D. thesis completed in the United States in 1988 (Orlikowski, 1988). The analysis is carried out through a textual re-reading of this thesis, concentrating on genres as indicators of flux in ideological changes regarding the move from an essentially realist genre to what may be described as a more evocative, or postmodern, genre. The importance of discourse and genre textuality is discussed. The aim in this paper is demonstrate how information systems researchers act within socio-historical contexts which reflect disciplinary changes. The argument is that information systems researchers can benefit from reflecting upon their work in context and that the reflection provides a critical approach which complements the evaluation of research quality from philosophical principles. The view that the information systems research discipline is a historically-dependent social construction with evolving methodological principles is supported.

13

Achieving the Research Goal with Qualitative Methods: Lessons Learned along the Way

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Abstract

The limitations of exclusive use of quantitative methods for social science research in the information systems field have led to increasing interest in qualitative alternatives. However, qualitative methods present their own challenges. The challenge addressed in this paper is that of keeping the methodology focused on the research goal rather than existing as an end in itself. Three different research projects employing qualitative methodologies carried out in three different countries – the United States, Ireland and The Netherlands – are used to explore some of the issues and lessons learned about the use of qualitative methods in pursuit of the research goal.

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Capturing Complex, Distributed Activities: Video-Based Interaction Analysis as a Component of Workplace Ethnography

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Abstract

Organizations increasingly carry out their work by relying on complex, distributed activities supported by a wide range of technologies for synchronous and asynchronous communication and collaboration. How do we capture complex, distributed activities? What tools do we use in settings where even a team of trained ethnographers could not comprehend, much less record, all the interplays between team members, the subtleties of a look or tone, the shifts in orientation to people or objects in the workspace? In this paper, we explore the use of video-based Interaction Analysis to extend the ability of traditional ethnographic methods for data collection and analysis. We draw on a study of a distributed organization's use of remote meeting technologies to illustrate how this approach contributes to the depth of insights to be garnered from workplace ethnography.

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Critical Ethnography in Information Systems

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Abstract

In recent years, there has been growing interest in qualitative research methods and their application to information systems. This paper discusses the nature and applicability of one qualitative approach to information systems research, called critical ethnography. Critical ethnography, informed by critical hermeneutics, is one of many possible approaches to ethnographic research. A critical ethnographic study of the development of an information system in mental health is reviewed.

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Exploring a Chairman of the Board's Construction of Organizational Reality: The Colruyt Case

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Abstract

A qualitative exploration of Colruyt, a Belgian company that evolved from a one-store enterprise into Belgium's third largest food retail chain comprising some 120 stores, is presented. The company is unique on several dimensions: its managerial structures and business processes, its use of information technology, and its views of company rights, duties, and obligations concerning customers, employees, creditors, and government. During this interview, Mr. Colruyt,[2] Chairman of Colruyt's Supervisory Board, returns time and again to a single dominant idea: the use of information technology based communication to create new possibilities, organizational structures, and relationships among the firm and its employees, worker unions, customers, and suppliers. The qualitative exploration clarifies how societal, religious, historical, and linguistic beliefs unite to form a unique corporate environment. Because the contact time with the Chair of the Supervisory Board was limited to three hours, a qualitative approach was key to the success of an in-depth exploration of the company. Our analysis should be of interest to managers and academics who practice or study global business and business process reengineering.

[2]Mr. Colruyt was the recipient of the 1993 Belgian Business Man of the Year Award.

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Acquiring Expert Knowledge on IS Function Design

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Abstract

Reorganizing the IS function can contribute to its efficiency and effectiveness. Management can choose from a large number of organizational options. This leads to uncertainty and a need for decision support. The knowledge of experts in this domain was elicited using think aloud protocols. Next the protocols were analyzed to derive guidelines that can be applied in practice. During the analysis, several techniques were tried. This knowledge acquisition process turned out to be very complex and labor intensive but it also was a rich source of information.

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Transitioning to Client/Server: Using a Temporal Framework to Study Organizational Change

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Abstract

Research on the management of information systems has rarely conducted in-depth investigations on the problematic role of time in the development and implementation of these systems. When the research has done this, it has interpreted time in an objective, linear sense. This paper calls attention to the existence of not only the objective nature, but also the subjective nature of time in the organizational change surrounding the implementation of new information systems. This paper draws its empirical material from an on-going study of the implementation and use of distributed computing-based systems at a mid-sized university (MSU). Implementing client/server networks illuminates

three themes that contribute to the dual objective/subjective nature of time at MSU: (1) client/ server computing is a complex web of technologies and involves people who are struggling to reach a stable, productive state; (2) the development of a client/server project is a discontinuous process; and (3) because of the number of stakeholders involved in the implementation of client/server systems, there are "temporal asymmetries" – that is, differences in how these people themselves perceive and experience time. For managers, to understand the subjective, perceptual nature of time can provide a managerial lever. For researchers, these temporal asymmetries make a difference to how data are collected and interpreted.

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Playing Politics with E-Mail: A Longitudinal Conflict-Based Analysis

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Abstract

Few studies have attempted to link e-mail use to power and politics. The purpose of this paper is to integrate issues of power and conflict into the research on e-mail. To frame the discussion, the paper starts from a review of the relevant writings on power and e-mail. The literature review is concluded with the assertion that contextual, temporal, and conflict management aspects should be incorporated into research on power in organizations. Following this assertion, one of the leading models on conflict management is introduced and used to analyze a case study. The case is presented as a play in three "acts." Each of the acts outlines a different set of conflict management strategies that were utilized by management and employees. The discussion synthesizes the analysis by demonstrating that a combined power and conflict management perspective can explain the playing of politics with e-mail.

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Becoming Part of the Furniture: The Institutionalization of Information Systems

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Abstract

The institutionalization of information systems allows managers in organizations to concentrate on and devote creative energy to their prime tasks. This paper argues that the process of deciding whether an information system is institutionalized or not can be understood better by examining its political dimension. We focus on the failure to institutionalize the London Ambulance Service information system. Our analysis unravels the political factors that influenced the system breakdown and its abandonment. In doing so, we propose a framework grounded on the interpretive tradition of research into information systems. The framework we are introducing will contribute to the understanding of power and institutionalization, in research into organizational information systems.

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Value in Triangulation: A Comparison of Two Approaches for Combining Qualitative and Quantitative Methods

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Abstract

This paper raises and pursues the question of why research utilizing mixed, quantitative and qualitative methods has been so strongly advocated, yet so little achieved. Following an overview of a range of solutions to the call for "ethodological pluralism," a conceptual framework for understanding the process and outcomes of mixed method research is advanced, and several research studies are used to illustrate the framework. The conceptual framework is based on two dimensions suggested by prior research. Specifically, the framework analyzes various outcomes that emerge from the research – such as different types of contradictions (Robey 1995) and also whether the two methods were employed *sequentially* or *independently*. The paper analyzes the relationship between these two dimensions of the framework, offering some possible reasons why mixed-methods studies in which the two methods are employed independently appear to lead to different outcomes.

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Qualitative Research in Information Systems: Time to be Subjective?

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Abstract

The starting point of a researcher's methodological choice within information systems is not so much a problem of how many methods we employ or if those are of a quantitative or a qualitative nature, but the ability to identify the philosophical and theoretical assumptions which leads to the choice of the appropriate methodology. In practice, despite the recognition of the virtues and the role of qualitative methods in information systems research, explicit institutional barriers and implicit functionalistic assumptions within the field have prevented much progress in their application. There is the danger in not recognizing the resulting side-effect where researchers use qualitative methods in a quantitative manner and pass it off as qualitative research. Using qualitative methods implies allowing and acknowledging the subjectivity of the research process, which should be looked upon as a strength rather than as a weakness.

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Actor-Network Theory and IS Research: Current Status and Future Prospects

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Abstract

An increasing interest is being shown, not least by IS researchers, in the socio-technical approach known as actor-network theory. The purpose of this paper is to assess the current and potential future contribution of the theory to IS research. A brief review of key concepts of the theory is given, some IS literature which uses the theory is described, and significant criticisms of the theory are examined in some detail. Finally, implications are drawn on the potential value of the theory for IS research in the future, with the broad conclusion being that it has much to offer in both theoretical and methodological terms.

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Imagine: Thought Experiments in Information Systems Research

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Abstract

In this paper, we will argue that thought experiments can play a significant role in qualitative information systems research. We show the unique role that thought experiments can play in destroying existing belief systems within a community as well as how they can help creating new ones. Because thought experiments have to rely on existing data and concepts, they are particularly effective at providing the shift in perspective needed for a scientific revolution. In the paper, we analyze four thought experiments, relevant to information systems, to show how they are able to bring structure to a muddled discourse in a way that empirical, quantitative research cannot. We conclude with a discussion of the conditions necessary for effective thought experiments that will enable them to be convincing and challenging. In so doing, it is hoped that the result will be further clarity in the types of questions and answers that we should be exploring in the study of information systems.

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Legal Case Analysis in IS Research: Failures in Employing and Outsourcing for IT Professionals

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Abstract

In this paper, we introduce readers to the richness of existing legal cases as sources of secondary data for analyzing contemporary issues in the management of information technology. Drawing upon legal research techniques and the principles of typology construction in the social sciences, we describe a method of creating prototypical disputes: synthesizing large masses of qualitative data embedded in past legal cases into summarized descriptions that encapsulate the most commonly found characteristics in those cases. We then demonstrate the development of themes or prototypical disputes on the basis of court decisions on issues arising from employing and outsourcing for IT professionals. We conclude by discussing other domains in the management of IT that may be amenable to the legal case methodology proposed in this study.

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Balancing Interpretation and Intervention in Information System Research: The Action Case Approach

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Abstract

Understanding how technical artefacts are created and used within organizations is a central aspect of the IS research discipline. The conduct of research in an organizational setting is thus a major issue for the IS community. A research framework for in-context IS research is presented and used to position purified and hybrid forms of research method. From the framework, theoretical support for an action case research method is presented. The research framework is then used to describe and explain an IS research project from which a practice-based rationale for an action case method is argued. Characteristics of the action case method, a hybrid of interpretation and intervention, are described. Learning at three levels of analysis – concrete, general, and meta – is proposed as a way of reflecting on both the content of an IS research project and the IS research methods employed.

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Using Case Study Research to Build Theories of IT Implementation

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Abstract

In this paper, we present and illustrate how the approach proposed by Eisenhardt (1989) for building theories from case study research can help researchers understand and explain the inherently dynamic nature of numerous IT phenomena. The approach, which adopts a positivist view of research, relies on past literature and empirical data as well as on the insights of the researcher to build incrementally more powerful theories. We describe in some detail how this methodology was applied in a particular research study on IT implementation and how the use of this approach contributed to the discovery of a number of new perspectives and empirical insights. Furthermore, we discuss when it is appropriate to follow, to ignore, or to modify the suggestions made by Eisenhardt. Overall, using Eisenhardt's approach as a starting point, our objective is to provide a more complete and detailed guide for using case studies to build theories within the MIS field.

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Panel – Qualitative Research in Health Care

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Interest in information systems in health care is growing. Information technology is becoming increasingly important as health care organizations feel pressures to improve quality while reducing costs. In addition to the more familiar business and administrative applications, information technology also is used to collect, analyze, and communicate clinical data in support of patient care processes. For example, there are systems for medical records, for communicating treatment orders or laboratory test results, for organizing and disseminating health knowledge as practical guidelines, for enhancing clinical practice through decision support systems, and for real-time monitoring of patient conditions.

An increasing number of information systems researchers throughout the world are carrying out studies in health care organizations. While the information systems field has developed, the discipline of medical informatics also has developed, a discipline that includes interest in organizational aspects as well as other areas.

The panel brings together information systems and medical informatics researchers experienced in different national health care settings. Panelists will draw on a variety of research projects to provide empirically based discussion of why qualitative research is important in health care and how to derive more general lessons for

qualitative information systems research in other substantive areas. Panelists will draw on their research experiences to discuss

- the appropriateness of qualitative research in health care;
- issues unique to the intersection of health care and information systems qualitative research; and
- general issues of information systems qualitative research as they are exemplified in health care settings.

Bonnie Kaplan will chair and moderate the panel. She will make introductory remarks that set the panel agenda and closing remarks that tie together panelists' comments and provide a framework for opportunities and experiences in qualitative research in health care. She will raise issues in conducting information systems qualitative research in hospitals, such as legitimacy of the researcher, gaining entry, and presentation of results. She will draw upon research findings from a variety of hospital-based research projects she conducted to suggest topics and theoretical frameworks relevant to the IS research community at large.

Francis Lau will present an example of qualitative IS research in health care. He will discuss a project in which he and other researchers are studying the adoption and use of an Internet-based disease guidance system by physicians, residents, and nurses. The project provides an example of how IS qualitative research can be applied in health care by illustrating the development and refinement of such qualitative methodologies as action research, ethnography, longitudinal research, and phenomenolgy.

Jos Aarts will present a theoretical basis for qualitative research projects in information systems using health care settings as an example. He will discuss the social nature of clinical work. He will present a conceptual model that relates organizational change and the planning, design, and implementation of information systems to clinical work. Based on that, he will present the types of qualitative methodologies most appropriate for assessing the impact of information and communication technology in health care delivery. He will also propose an agenda for IS research in health care settings. The models and methodologies he suggests should be of general interest to the IS community because of the social nature of work in other settings.

Diana Forsythe will discuss what constitutes ethnographic expertise and why it is useful in system design and evaluation based on her nine years of research in software development laboratories where well-known medical informatics developers turned ethnographers. Forsythe's characterization of the misconceptions involved in such do-it-yourself ethnography will be recognizable to IS researchers working in other contextual settings. Her discussion of some do's and don'ts of ethnographic research will shed light on the legitimacy of qualitative research in IS.